CUSTOMER NO.: 24498   **PATENT**
Serial No.: 10/537,114   **PU020487**
Office Action dated: April 16, 2010
Response dated: May 13, 2010

REMARKS

The Office Action mailed April 16, 2010 has been reviewed and carefully considered. No new matter has been added.

Claim 1 has been amended. Previously withdrawn Claims 7-25, as well as Claims 2-3, have been cancelled. New Claims 27-28 have been added. Claims 1, 4-6, and 26-28 are currently pending.

In the Office Action, the Examiner stated that "[t]his application contains claims drawn to an invention nonelected with traverse in the reply filed on 11/24/09. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action." Thus, previously withdrawn Claims 7-25 have been cancelled by this amendment.

Claim 1 stands rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,570,923 to Saunders et al. (hereinafter "Saunders"). Claims 2, 4-6, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders in view of Yoneyama et al., "Fast Dissolve Operations for MPEG Video Contents" (hereinafter "Yoneyama"). Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders in view of Yoneyama as applied to Claim 2, and further in view of Applicant's admitted prior art (AAPA).

It is to be noted that the independent claim in the case is Claim 1. Moreover, as noted above, Claim 1 has been amended. Support for the amendment to Claim 1 may be found at least at Figures 2 and 3 and page 6, line 31 to page 9, line 2 of the Applicants' specification, as well as originally filed Claims 2-3. Further, as noted above, Claims 2-3 have been cancelled.

It is respectfully asserted that Saunders does not teach or suggest the following limitations now recited in amended Claim 1:

          1.   A video encoder for encoding video signal data for at least one cross-fade picture disposed temporally between a fade-out start picture and a fade-in end picture, which are used as reference pictures for coding the at least one cross-fade picture, the encoder comprising:

a reference picture store for storing each of the fade-out start picture and the fade-in end picture;

a reference picture weighting applicator;

a reference picture weighting factor unit in signal communication with the reference picture store and the reference picture weighting applicator for receiving the fade-out start picture and the fade-in end picture from the reference picture store, and selecting weighting factors corresponding to each of the fade-out start picture and the fade-in end picture, respectively, to supply to said reference picture weighting applicator for coding the at least one cross-fade picture; and

a motion compensation unit in signal communication with the reference picture store and the reference picture weighting applicator for receiving at least one of the fade-out start picture and the fade-in end picture from the reference picture store and providing at least one of a motion compensated fade-out start picture and a motion compensated fade-in end picture to the reference picture weighting applicator for coding the at least one cross-fade picture.

Against Claim 1, the Examiner has stated the following:

Saunders et al, in Figure 8, discloses the same video encoder for encoding video signal data for at least one cross-fade picture disposed temporally between a fade-out picture (Video A) and a fade-in picture (Video B), which are used as reference pictures for coding the at least one cross-fade picture as specified in claim 1 of the present invention, the encoder comprising a reference picture weighting applicator (110) and a reference picture weighting factor unit (120) in signal communication with the reference picture weighting applicator 110 for selecting, based on one or more criteria (e.g. pixels) weighting factors (e.g., K) corresponding to each of the fade-out start picture and the fade-in end picture, respectively, for coding the at least one cross-fade picture (col. 4 Lines 40-col. 5 Lines 25).

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Thus, Figure 8 and column 4, line 50 to column 5, line 25 of Saunders has been cited against the above reproduced limitations of Claim 1. Moreover, the Examiner has equated element 110 of Figure 8 of Saunders to the reference picture weighting applicator recited in Claim 1, and has equated element 120 of Figure 8 of Saunders to the reference picture weighting factor unit recited in Claim 1.

However, while Claim 1 recites "a video encoder for encoding video signal data for at least one cross-fade picture …, the encoder comprising: a reference picture weighting applicator; and a reference picture weighting factor unit in signal communication with the reference picture weighting applicator", Figure 8 of Saunders shows and is explicitly directed to a digital signal processor having a plurality of encoders (E1, E2, and E3), where none of the encoders include a reference picture weighting applicator and a reference picture weighting factor unit, in contrast to the video encoder explicitly recited in Claim 1. That is, cited element 110 of Saunders is a mixer and cited element 120 of Saunders is a signal source, both of which are disposed external to (and, hence, not comprised in) each encoder (E1, E2, and E3) of Figure 8 of Saunders (see, e.g., Saunders, Figure 8).

Hence, right at the onset, the Examiner has failed to set forth a prima facie case of rejection, having failed to show each and every recited element in a corresponding cited reference as required under 35 U.S.C. 102(e).

Further differences exists between the recited limitations of Claim 1 and Saunders. For example, as admitted by the Examiner, "Saunders does not specifically teach the use of a compensation unit for providing a motion compensated fade-out start or end picture responsive to the reference picture weighting factor unit." Moreover, as admitted by the Examiner "both Saunders et al and Yoneyama et al differ from the present invention in that they fail to disclose such [reference picture] storage is in communication with the motion compensation unit". While the Examiner noted that the AAPA teaches the concept of a reference picture store in signal communication with a motion compensation unit, the AAPA certainly does not teach or even remotely suggest "a reference picture weighting factor unit in signal

communication with the reference picture store and the reference picture weighting applicator" or "a motion compensation unit in signal communication with the reference picture store and the reference picture weighting applicator" as is now explicitly recited in amended Claim 1. Hence, the AAPA does not cure the deficiencies of Saunders and/or Yoneyama. For example, the AAPA, as represented by Figure 1 of the instant application, does not even contemplate or even remotely teach or suggest the concept of weighted prediction, let alone a reference picture weighting applicator or a reference picture weighting factor unit, let alone the detailed limitations involving the same as now recited in Claim 1.

We further note that since Yoneyama fails to even teach or suggest a reference picture weighting applicator and a reference picture weighting unit, and that Saunders shows elements 110 and 120 as pre-processing elements that are prior to, e.g., encoder E2, it is clear that neither Yoneyama nor Saunders can apply weighting factors to motion compensated reference pictures in contrast to the explicit limitations recited in Claim 1.

Moreover, given that such circuit configurations of both Yoneyama and Saunders differ from that recited in Claim 1, particularly the pre-processing configuration of elements 110 and 120 with respect to encoder E2 of Saunders (since, as noted above, Yoneyama does not even teach or remotely suggest a reference picture weighting applicator and a reference picture weighting unit), such circuit configuration of Saunders actually _teaches away_ from the limitations of Claim 1, since Saunders uses a pre-processing configuration regarding elements 110 and 120 while the reference picture weighting applicator recited in Claim 1 is clearly in an in-loop configuration (i.e., within the motion compensation loop) as would be readily recognized by one of ordinary skill in the art given the connections of the elements explicitly recited in Claim 1. In view of the preceding, we note that MPEP 2141.02.VI sets forth the following: A prior art reference must be considered in its entirety, i.e., as a whole, INCLUDING PORTIONS THAT WOULD LEAD AWAY FROM THE CLAIMED INVENTION. _W.L. Gore & Associates, Inc. v. Garlock, Inc._, 721 F.2d 1540, 220 USPQ 303 (Fed Cir. 1983), _cert. denied_, 469 U.S. 851 (1984) (emphasis added) (_see also_, MPEP §2141.02)).

Thus, none of the cited references, taken singly or in combination, teach or suggest all of the above limitations of Claim 1.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Hence, Claim 1 is patentably distinct and non-obvious over Saunders (as well as the remaining references, either taken singly or in combination) for at least the reasons set forth above.

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103. Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render a claim unpatentable, however, the Office must do more than merely "consider" each and every feature for this claim. Instead, the asserted combination of the patents must also teach or suggest *each and every claim feature. See In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art." *See In re Wada and Murph*y, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claims 4-6 and 26 directly or indirectly depend from Claim 1 and, thus, respectively include all the limitations of Claim 1. Accordingly, Claims 4-6 and 26 are patentably distinct

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and non-obvious over the cited references for at least the reasons set forth above with respect to independent Claim 1.

Thus, reconsideration of the rejections is respectfully requested.

Moreover, as noted above, new Claims 27 and 28 have been added. Support for Claim 27 may be found at least at page 7, lines 23-25 of the Applicants' specification. Support for Claim 28 may be found at least at Figures 2 and 3 of the Applicants' specification, as well as the text corresponding thereto.

Initially, we note that Claims 27 and 28 depend from Claim 1 and, thus, include all the limitations of Claim 1. Accordingly, Claims 27 and 28 are patentably distinct and non-obvious over the cited references for at least the same reasons set forth above with respect to Claim 1.

Moreover, it is respectfully asserted that Claims 27 and 28 are patentably distinct and non-obvious over the cited references in their own right.

For example, it is respectfully asserted that none of the cited references, either taken singly or in any combination, teach or suggest "wherein said reference picture weighting applicator comprises a shift register" as recited in Claim 27. Rather, Saunders, Yoneyama, and the AAPA are completely silent regarding the same, each failing to include even one occurrence of the word "register", let alone "shift register", nor the overall concept relating thereto. For example, while only Yoneyama includes the word "shift", usage of such word in Yoneyama relates to a motion search and not to a reference picture weighting applicator, which is not surprising since Yoneyama does not even disclose a reference picture weighting applicator.

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in any combination, teach or suggest "wherein said reference picture weighting applicator is configured in an in-loop configuration within the video encoder" as recited in Claim 28. "In-loop is a well-known term of art known to refer to the motion compensation loop within an encoder. In contrast to the preceding limitations of Claim 28, Figure 8 of Saunders simply shows encoders E1, E2, and E3, but does not show any elements therein and, hence, cannot

show the above reproduced limitations of Claim 28. Moreover, neither Yoneyama nor the
AAPA cure the deficiencies of Saunders, as neither show a reference picture weighting
applicator, let alone a reference picture weighting applicator in an in-loop configuration as
essentially recited in Claim 28.

Hence, new Claims 27 and 28 are believed to be patentably distinct and non-obvious
over the cited references for at least the reasons set forth above.

In view of the foregoing, Applicant respectfully requests that the rejection of the claims
set forth in the Office Action of April 16, 2010 be withdrawn, that pending Claims 1, 4-6, and
26-28 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

The fee of $810 required by 37 C.F.R. §1.17(e) for the filing of a Request for
Continued Examination (RCE) under 37 C.F.R. §1.114 is authorized. It is believed that no
further additional fees or charges are currently due. However, in the event that any additional
fees or charges are required at this time in connection with the application, they may be
charged to applicants' Deposit Account No. 07-0832.

Respectfully submitted,

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